



#1938

PATENT

Attorney Docket No. SNS-006CP1 (7268/10)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Shih et al.  
U.S. PATENT NO. 6,552,722  
ISSUED: April 22, 2003  
SERIAL NO. 09/347,637  
FILING DATE: July 6, 1999  
TITLE: SYSTEMS AND METHODS FOR SCULPTING VIRTUAL  
OBJECTS IN A HAPTIC VIRTUAL REALITY ENVIRONMENT

Certificate of Correction Branch  
Commissioner for Patents  
Washington, D.C. 20231

**REQUEST FOR CERTIFICATE OF CORRECTION  
UNDER 35 U.S.C. § 254 AND 37 C.F.R. 1.322**

Dear Sir:

The Assignee of record for the above-referenced patent, SensAble Technologies, Inc., by virtue of the assignment recorded at Reel 010586, Frame 0950, of the U.S. Patent Office assignment records hereby requests that a Certificate of Correction be issued for U.S. Patent No. 6,552,722 under 35 U.S.C. § 254 and 37 C.F.R. § 1.322.

The Assignee believes that the error identified herein and corrected in the enclosed PTO Form 1050 warrants issuance of a Certificate of Correction. Specifically, the enclosed PTO Form 1050 corrects the errors in the above-referenced Letters Patent. The errors in the printed patent are described as follows:

In claim 19, column 43, line 2, after “determining a virtual tool for use by the user in the haptic virtual environment;” there should be inserted, “selecting a modification mode that modifies a voxel value representative of the voxel-based virtual object;”.

In claim 27, column 44, line 3, after “a virtual tool for use by the user in the haptic virtual environment;” there should be inserted, “a modification mode that modifies a voxel value representative of the voxel-based virtual object;”.

Claims 19 and 27, as they appear in the printed patent, do not reflect the Examiner’s Amendment indicated on Page 3 of the Detailed Action that was mailed with the Notice of Allowability in the above-referenced case on November 5, 2002, a copy of which is enclosed herein. The Assignee believes that the foregoing error represents a Patent Office mistake.

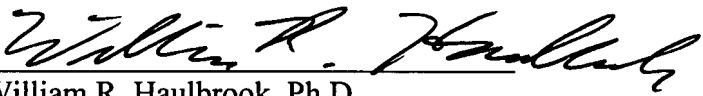
The Assignee respectfully requests that the correction appearing on the enclosed Certificate of Correction be issued. A duplicate of the PTO Form 1050 is enclosed. The Assignee believes that no fees are due in connection with the submission of this paper. However, should a fee be due, the Commissioner is authorized to charge the necessary fee to Deposit Account No. 20-0531.

If there are any questions regarding this matter, the U.S. Patent Office is invited to contact the undersigned at the telephone number identified below.

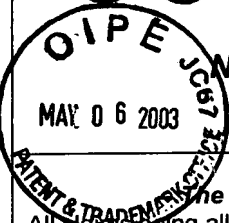
Respectfully submitted,

Date: May 1, 2003  
Reg. No.: 53,002

Tel. No.: (617) 310-8427  
Fax No.: (617) 248-7100

  
William R. Haulbrook, Ph.D.  
Attorney for Applicant  
Testa, Hurwitz, & Thibeault, LLP  
High Street Tower  
125 High Street  
Boston, Massachusetts 02110

# COPY



## Notice of Allowability

Application No. 09/347,637	Applicant(s) SHIH ET AL.	
Examiner Enrique L. Santiago	Art Unit 2671	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address--  
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 9-9-2002.
2.  The allowed claim(s) is/are 1-34.
3.  The drawings filed on 06 July 1999 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.
5.  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - (a)  The translation of the foreign language provisional application has been received.
6.  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8.  CORRECTED DRAWINGS must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No. \_\_\_\_\_.
  - (b)  including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the Examiner.
  - (c)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the top margin (not the back) of each sheet. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

9.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

- |  |   |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892)  | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)          |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____             |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____               | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment                  |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
|  | 9 <input type="checkbox"/> Other  |

Art Unit: 2671

**DETAILED ACTION**

**Allowable Subject Matter**

Claims 1-34 are allowed.

The following is an examiner's statement of reasons for allowance:

Claims 1-34 are allowed, because the prior art alone or in combination among other limitations does not teach or suggest to one of ordinary skill in the art a method for modifying a voxel based virtual object, selecting a modification mode that modifies a voxel value representative of the voxel-based virtual object. The closest prior art, Tarr US patent no. 6,191,796, teaches a method for modifying a virtual object in a haptic virtual environment, comprising: determining a virtual tool comprising a plurality of discrete points for use by the user in the haptic virtual environment; selecting a modification mode for the virtual tool; sensing a location of a user in real space; determining locations of the plurality of discrete points of the virtual tool relative to a location of the virtual; calculating an interaction force between the virtual tool and the virtual object based on the locations of the plurality of discrete points of the virtual tool and the location of the virtual object; producing a modified virtual object by modifying the virtual object based on the modification mode, the locations of the plurality of discrete points of the virtual tool, and the location of the virtual object; and outputting the modified virtual object, however said prior art fails to teach the previously stated limitations contained in the applicants claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

Art Unit: 2671

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Christopher Stamos on 11/04/2002.

On claim 19, line 6, after "determining a virtual tool for use by the user in the haptic virtual environment;" please insert -- selecting a modification mode that modifies a voxel value representative of the voxel-based virtual object; --

On claim 27, line 4, after "a virtual tool for use by the user in the haptic virtual environment;" please insert -- a modification mode that modifies a voxel value representative of the voxel-based virtual object; --

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Enrique L. Santiago whose telephone number is (703) 306-5908. The examiner can normally be reached on Monday to Friday from 7:00 A.M. to 3:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Application/Control Number: 09/347,637

Page 4

Art Unit: 2671

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington,  
VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the Technology Center 2600 Customer Service Office whose telephone number is  
(703) 306-0377.

Enrique L. Santiago

November 4, 2002



MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,552,722 **B1**  
DATED : April 22, 2003  
INVENTOR(S) : Loren Shih, Walter A. Aviles, Thomas H. Massie, and Walter C. Shannon, III

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

~~In the claims:~~

~~In claim 19~~, column 43, at the end of line 2 and after the semicolon, please add --selecting a modification mode that modifies a voxel value representative of the voxel-based virtual object;--.

~~In claim 27~~, column 44, at the end of line 3 and after the semicolon, please add --a modification mode that modifies a voxel value representative of the voxel-based virtual object;--.

MAILING ADDRESS OF SENDER: Patent Administrator                      PATENT NO.: 6,552,722  
Testa Hurwitz & Thibeault, LLP  
High Street Tower  
125 High Street  
Boston, MA 02110  
(617) 248-7000

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,552,722  
DATED : April 22, 2003  
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MAILING ADDRESS OF SENDER: Patent Administrator                      PATENT NO.: 6,552,722  
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125 High Street  
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(617) 248-7000